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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,114	12/06/2001	Masaki Yamada	216932US2	5215

22850 7590 09/25/2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

GREENE, PERSHELLE L

ART UNIT PAPER NUMBER

2826

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/003,114	YAMADA ET AL.	
	Examiner	Art Unit	
	Pershelle Greene	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/25/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 11-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8 and 10 is/are rejected.
- 7) ☒ Claim(s) 6 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2826

Serial Number: 10/003114

Attorney's Docket #: 216932US2

Filing Date: 12/06/2001

Applicant: Yamada et al.

Examiner: Pershelle Greene

DETAILED ACTION

Applicant's election without traverse of Group I claims 1-10 is acknowledged.

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 10 is being rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear and confusing what layer is being referenced in claim 10. Is claim 10 referring to one of the first and second interlayer insulating layers or is claim 10 referring the insulating film?

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1-5 and 7-8 are being rejected under 35 U.S.C. 102(a) as being anticipated by applicant's admitted prior art figure 1B.

As to claim 1, Applicant's admitted prior art figure 1b shows all the claimed subject matter:

- A. "a first interlayer insulating layer" is met by the first interlayer insulating layer 230;
- B. "a trench formed in the first interlayer insulating layer" is met by the trench 208B formed in the first interlayer insulating film;
- C. "a conductive layer ... of the first interlayer insulating film" is met by the conductive layer 250 buried in the trench; the conductive layer has a surface thereof higher than a surface of the first interlayer insulating layer.
- D. "an insulating film ... and the conductive layer" is met by the insulating film 260 having a flat surface and covering the first interlayer insulating layer and the conductive layer; and
- E. "a second interlayer insulating layer ... to the insulating film" is met by the second interlayer insulating layer 270 formed on the insulating film, the second

interlayer insulating layer having a high etching selective ratio to the insulating film.

As to claim 2, a film thickness of the insulating film on the first interlayer-insulating layer is greater than that on the conductive layer. Referring to figure 1B, the insulating film does not cover a portion of the conductive layer; therefor the insulating film on the interlayer-insulating layer is greater than that on the conductive layer.

As to claim 3, the insulating film is made of a coating type material.

As to claim 4, the insulating film has an effect of preventing diffusion of a conductor material in the conductive layer.

As to claim 5, any one of the first interlayer insulating layer and the second interlayer-insulating layer is made of an insulating material having a relative dielectric constant lower than that of a SiO₂ film.

As to claim 7, the conductive layer 250 includes a barrier metal layer 240.

As to claim 8, the conductive layer includes a Cu wiring layer.

Claim Objections

6. Claims 6 and 9 are being objected to as being dependent upon a rejected base claim.

Conclusion

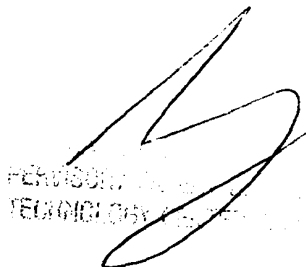
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pershelle Greene whose telephone number is 703-305-3870. The examiner can normally be reached on M-F 8:30am - 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 703-308-6601. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

PLG



PERVISOR
TECHNOLOGY CENTER